

JOINT INVESTIGATION REPORT

INCIDENT NO: 2517868 JIV report S/N: 1030181

(Note: As practicable as possible the JIT report is to be signed in the field by all the participating parties)

A. GENERAL INFORMATION:

1. Fountain Incident Number: 2517868 2. Type of incident* OIL SPILL
3. Name of Location 36" NKPOKU - BDMU PIPELINE
4. Name of nearest community RUMUESARA 5. State: RIVERS 6. LGA OBIO/AKPO
7. Type of Production facility/Installation OIL PIPELINE
8. Asset owner/District THE SHELL PETROLEUM DEVELOPMENT COMPANY OF NIGERIA LTD (SPDC) / PIPELINE

B. INCIDENT INFORMATION:

9. Details of incident

- a. Date Reported: 29TH NOVEMBER 2019
b. Start date/time of investigation: 29TH NOVEMBER 2019 / 14.00HRS
c. Investigation End date: 30TH NOVEMBER 2019 Actual investigation duration, days: TWO (2) DAYS
d. Description of spill point environment

- | | | |
|---|--|---|
| <input type="checkbox"/> Firm soil | <input checked="" type="checkbox"/> Loose soil | <input checked="" type="checkbox"/> Recently excavated area |
| <input type="checkbox"/> Under water | <input type="checkbox"/> Swampy | <input type="checkbox"/> Exposed pipe surface |
| <input type="checkbox"/> Well Platform (on Water) | <input type="checkbox"/> Drill Rig | |

Additional observations around the spill point:

e. Description of leak point (tick as applicable);

- | | | |
|--|---|--|
| <input type="checkbox"/> Drilled hole | <input type="checkbox"/> Hack saw cut | <input type="checkbox"/> Tear (_____) |
| <input type="checkbox"/> Complete Rupture | <input type="checkbox"/> Inward dent, | <input type="checkbox"/> Well head tampering |
| <input type="checkbox"/> Failed Weld-on illegal hot tap valve | <input type="checkbox"/> Failed Clamp, | <input type="checkbox"/> Missing Pipeline/Flowline |
| <input checked="" type="checkbox"/> Crude oil theft (illegal bunkering) point, | <input type="checkbox"/> Saver-pit over flow | <input type="checkbox"/> Third party tampering with Clamp |
| <input type="checkbox"/> Third party tampering with valve setting | <input type="checkbox"/> Bulging Outward | <input type="checkbox"/> Third party tampering with flange, |
| <input type="checkbox"/> Flare System/Bund wall failure | <input type="checkbox"/> Cold vent | <input type="checkbox"/> Surge vessel overflow, |
| <input type="checkbox"/> Valve Failure | <input type="checkbox"/> Relief valve failure | <input type="checkbox"/> Accidental 3 rd party equipment impact |
| <input type="checkbox"/> Others(specify) _____ | | |

f. Incident caused by:

- Third party interference (Sabotage ; crude theft ; Line theft ; Accidental 3rd party damage
 Operational Others (including Mystery spills) _____

*This can be: a) Oil Spill b) Drilling fluid/Chemical c) Siltation d) construction e) Encroachment f) Fire, g) non leaking Theft point removal
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g. Spill point coordinates

h. Measuring unit

WGS84

Northing:	Easting:
4.918350	7.029960
/	/
/	/

C. RISK ASSESSMENT

10. Type of environment:

Land
 Swamp
 Water
 Seasonal swamp
 Shoreline/Waterfront

i. Type of environment to which oil has spread:

Land
 Swamp
 Water
 River (identify) _____

ii. Weather condition:

Rain
 Sunny
 Dry
 Wet
 Windy
 Hot
 Cool

11. Distance to Sensitive habitat within 100m radius

<input type="checkbox"/> Government reserved and designated protected area	[,m]
<input type="checkbox"/> Drinking water source	[,m]
<input checked="" type="checkbox"/> Built up area	[70 ,m]
<input checked="" type="checkbox"/> Farmlands	[50 ,m]
<input type="checkbox"/> Fish Farm/Pond	[,m]
<input type="checkbox"/> Fishing net	[,m]
<input type="checkbox"/> Others (specify).	[,m]

12. Containment measures put in place;

Booms
 Trench
 Dyke
 Natural depression
 Pit
 None

Others: _____

13. Any pictures or video coverage? [N]

14. Further response/repair initiated as at the time of JIV? [N]

If yes to item 14, give brief description:

REPAIR BY CLAMPING

15. Was there any disruption to the investigation? [Y] [N]

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If yes to item 15 give brief description:

NOT APPLICABLE

16. Was JIV delayed?

[X] NO

If yes to item 16 give brief description: NOT APPLICABLE

D. TYPE/NUMBERS OF PROPERTIES, IF ANY, FOUND WITHIN THE AREA OF SPREAD OF OIL

17. Structures / Properties

S/N	Type of Structures	Description	Size	Number	Comments
1	FENCE			2	IMPACTED
/					

18. Crops/Economic Trees

S/N	Type of crops	Young	Medium	Matured	Quantity	Comments
1	CASSAVA		YES		MANY	IMPACTED
2	PALM TREES		YES	YES	MANY	IMPACTED
3	WATER LEAF	YES	YES		FEW	IMPACTED
4	PUMKIN		YES	YES	FEW	IMPACTED

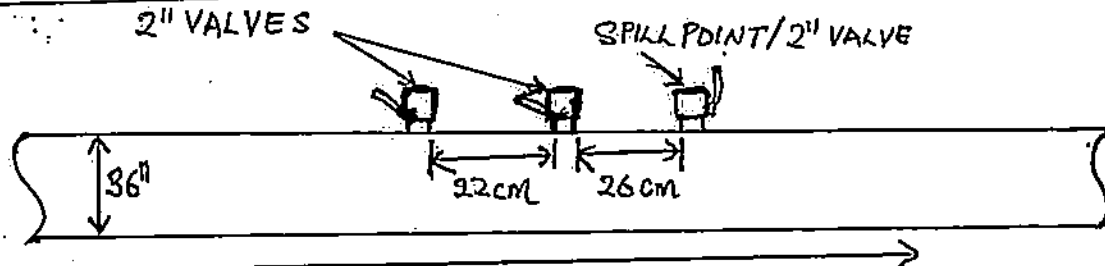
19. Fish/Nets/Ponds

S/N	Fish/Nets/Ponds	Description	Quantity/Size	Comments
NONE WITHIN AREA OF IMPACT				

20. Others (Specify) i.e. Animal Traps

S/N	Others	Description	Quantity/Size	Comments
NONE WITHIN AREA OF IMPACT				

E. GRAPHIC DESCRIPTION OF LEAK POINT (while detail report of the leak point should be contained in the leak report, overview sketch of the site should be added as an appendix 1) A SECTION OF 36" NKPOKU - BDMU PIPELINE AT RUMUESARA SHOWING SNO: 2" VALVE CRUDE THEFT POINTS INSTALLED AT 12 O'CLOCK POSITIONS 22CM AND 26CM FROM EACH DONE BY UNKNOWN PERSONS.



NKPOKU TO BDMU

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36" Nkpoku - Bomu Pipeline at Rumuesara		
FID: 2517868		
JIV Date: 29th & 30th November 2019		
WGS 84		
PTS	X(Eastings)	Y(Northings)
91	7.029964	4.918352
92	7.029962	4.918351
93	7.02996	4.91835
43	7.02994	4.91836
44	7.02994	4.91836
46	7.03008	4.91852
47	7.03034	4.91857
48	7.03055	4.91872
49	7.03065	4.91874
50	7.03069	4.91865
51	7.03083	4.9187
52	7.03079	4.91864
54	7.03059	4.91861
55	7.03045	4.91856
56	7.03049	4.91849
57	7.03017	4.91834
58	7.02985	4.91821
59	7.02946	4.91806
60	7.02912	4.91792
61	7.02888	4.91783
62	7.02886	4.91787
63	7.029	4.91794
64	7.02906	4.91803
65	7.02924	4.9181
66	7.02929	4.91803
67	7.02931	4.91802
68	7.02965	4.91814
69	7.02974	4.91822
70	7.02969	4.91837
71	7.03017	4.91832
72	7.02981	4.91817
73	7.03038	4.91843
74	7.03029	4.91813
75	7.03015	4.91817
76	7.03029	4.9181
77	7.03029	4.9181
78	7.03061	4.91793
79	7.03029	4.91807
80	7.03006	4.9179
81	7.02899	4.91743
83	7.0289	4.91782
84	7.02884	4.91803
85	7.02917	4.91825
86	7.02938	4.9184

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G. INCIDENT INFORMATION:

a. Impacted Area Details

- Total calculated area of impact 1.34 Ha
- Impact within SPDC R.O.W. YES
- Impact outside SPDC R.O.W. YES

b. Volume of oil recovered before completion of JIV (V_{rec}):

Recovered oil V_{rec} :	<u>218</u>	Barrels
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Controlled recovery/evacuation from source with no impact to environment:

<u>NIL</u>	Barrels
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c. Net Estimated Spilled Volume V_{est} (bbls)* =

250.99 BARRELS

Estimated Reported Volume V_{rep} (bbls) =**

251 BARRELS

***Notes:**

- Volume estimation was done using an excel based tool. (see attached for details on the calculation)
- Reported spilled volume is an estimate

Write other relevant notes taken into consideration for volume estimation or cause of spill:

THE IMPACTED AREA;
MOST OF THE IMPACT WERE SPLASHES ON
VEGETATION.

Calculation of the respective estimated volume is to be done on site as far as practicable using the new spill volume estimation software on site;
Conversion of m^3 to Barrels is Volume (m^3) \times 6.29; **Round up estimated volume to next whole number using the following rules:

• Any spill volume in excess of 1 bbl is rounded up to the next whole number.

• Any spill volume in less than 1 bbl is rounded up to the next 0.1 bbl.

Examples: Calculated volume = 15.3 bbl ——— Reported volume = 16 bbl
 Calculated volume = 0.35 bbl ——— Reported volume = 0.4 bbl
 Calculated volume = 0.01 bbl ——— Reported volume = 0.1 bbl.

Wherever this estimation tool is not applicable please refer to paragraph 6c (Deviations) of the JIV procedure to use appropriate steps for column estimation; record the calculation in a plain sheet of paper and attach to the JIV report.

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d. General Status of the site

i. Joint investigation of the incident site found that there is no residual impact after the initial response and JIT therefore recommend that the site be closed out

ii. Investigation of the incident site showed that there is residual impact on site requiring further works

e. Representatives

This report was filled, agreed and signed by the following joint investigation team representatives:

- Host Community:
- Department of Petroleum Resources [DPR]:
- National Oil Spill Detection and Response Agency [NOSDRA]:
- State Ministry of Environment [SME]:
- Shell Petroleum Development Company [SPDC]:
- *Separate DPR form has been filled out with same findings*

Tick as applicable

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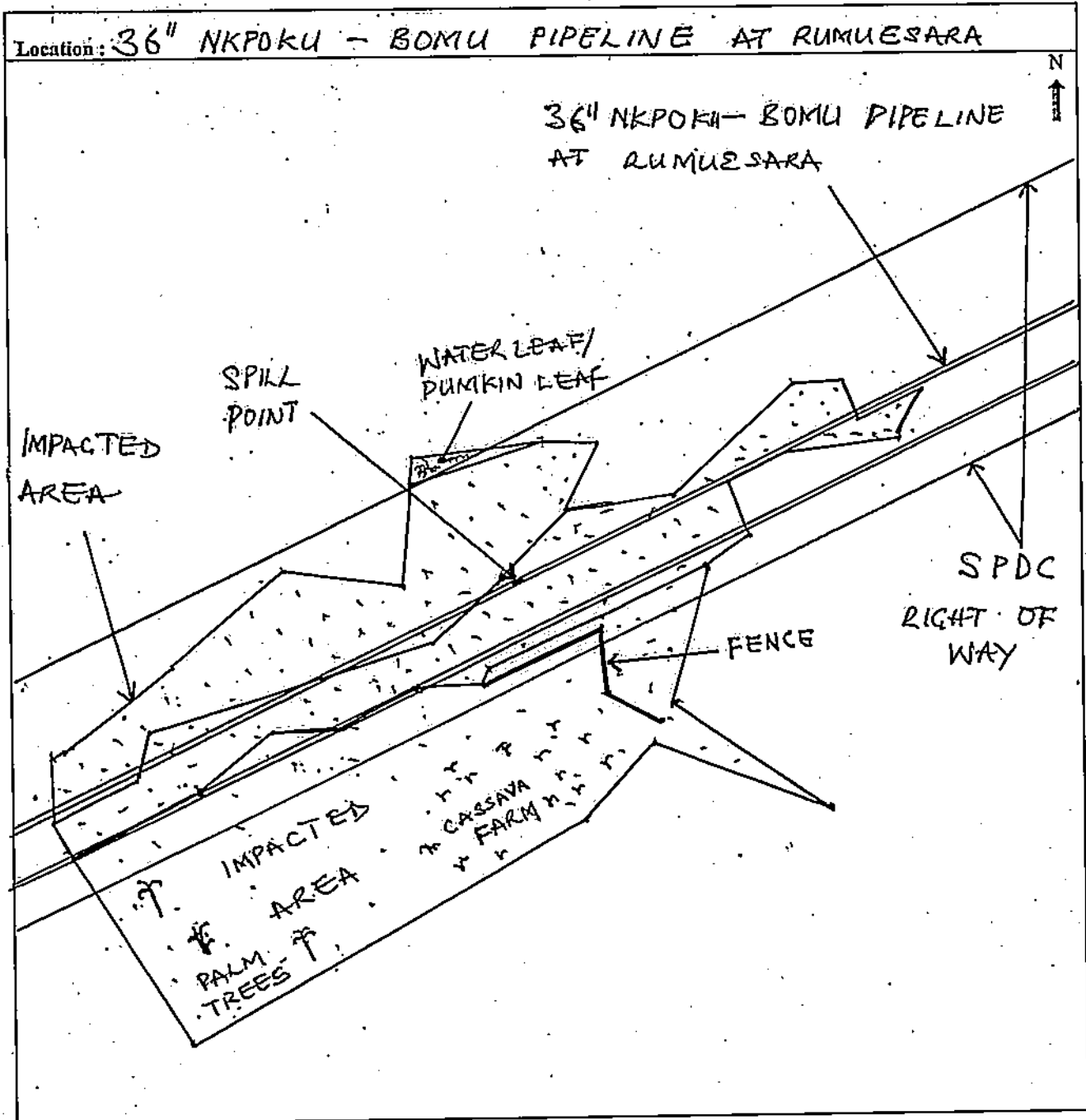
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f. Appendix I: Overview sketch of the site

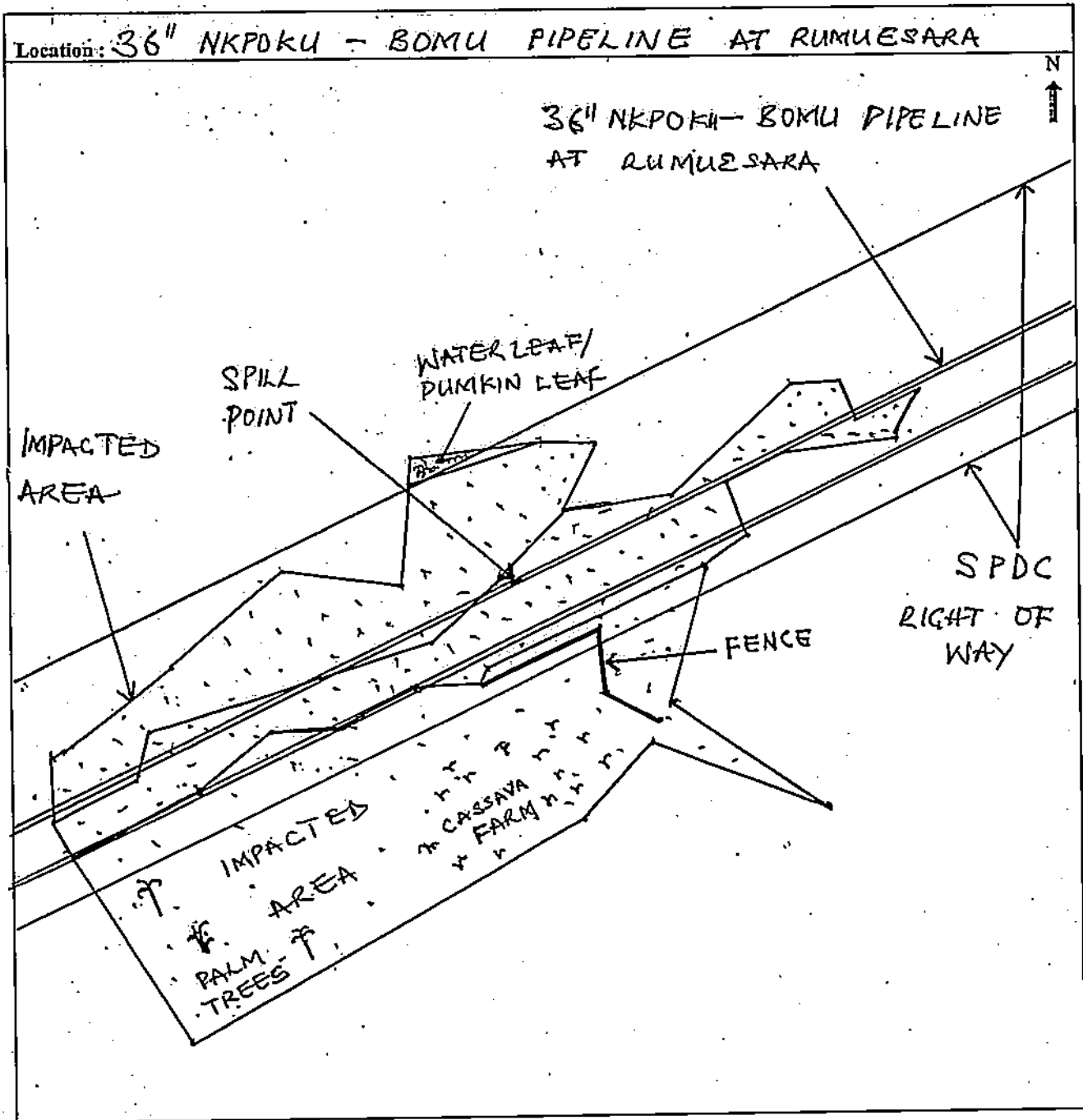


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f. Appendix I: Overview sketch of the site



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